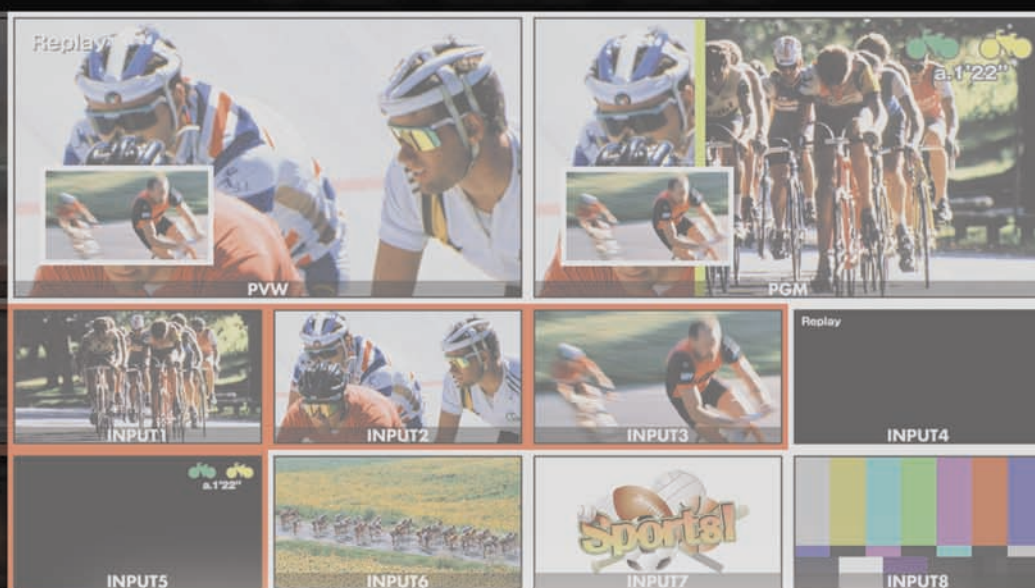


Compact, High-Performance, Multi-Format Live Switcher  
with Multi-view display

# AV-HS400



# Full Production Quality from Compact 1M/E Digital Video Switcher



HD-SDI Multi-purpose  
Camera  
AK-HC1500



**P2HD**

Memory Card Camera-Recorder



**P2HD**

Memory Card Camera-Recorder



**P2HD**

Memory Card Camera-Recorder



**P2HD**

Memory Card Camera-Recorder

News Magazine Show



Worldwide Production



Educational Solution



## Multi-Format HD/SD Compatibility for Worldwide Use

Compatibility with various HD/SD formats will help you meet changing production needs as video moves towards HD on a global scale.

The AV-HS400 lets you up-convert and mix SD signals with HD, to provide an easy transition to full HD production.

The AV-HS400 is compatible with virtually all common input devices.

### Compatible formats

**HD** 1080/59.94i, 1080/50i, 720/59.94p, 720/50p

**SD** 480/59.94i, 576/50i

## Built-in Frame Synchronizers for Versatile Operation

Each input features a built-in 10-bit Frame Synchronizer for smooth switching, even with asynchronous sources, such as DVDs or satellite feeds.

Reference (black burst) signal outputs are provided to enable synchronization with external systems.

The main unit and control panel are integrated in a compact body, ideal for small studios and mobile production.

\* AC 220 V to 240 V power supply.

• The unit is not waterproof so please avoid direct contact with rain and water.

Versatile Support  
for Remote Production





Compatible with HD/SD cameras worldwide.

Sports Arena

Hall



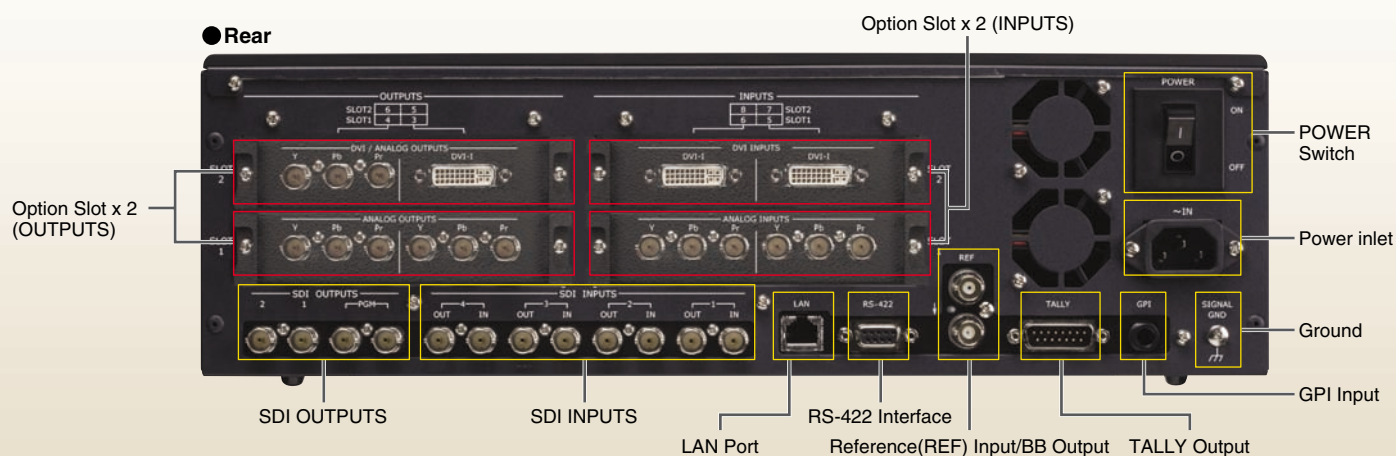
## Built-in HD-SDI Interfaces with DVI, Component, and SDI Options for up to 8 Inputs and 8 Outputs

- Four HD-SDI inputs and four HD-SDI outputs<sup>1\*</sup> are standard equipment.
- Optional input and output expansion boards include.  
Input..... Up to four HD/SD-SDI inputs or four HD/SD analog inputs, or DVI inputs<sup>2\*</sup> can be added.  
Optional input boards feature up-converters.  
Output... Up to four HD/SD analog outputs or up to two DVI outputs<sup>3\*</sup> can be added.
- Tally outputs for up to eight cameras for extra convenience.
- RS-422 compatible (GVG protocol compatible) control jack.

<sup>1\*</sup> Two interfaces assignable as PGM, PVW, AUX, multi-screen and keyout.    <sup>2\*</sup> Compatible with XGA, WXGA, SXGA.

<sup>3\*</sup> Compatible with XGA (1024 x 768), WXGA (1280 x 768), SXGA (1280 x 1024), WSXGA+ (1680 x 1050)<sup>4\*</sup>, UXGA (1600 x 1200)<sup>4\*</sup>, WUXGA (1920 x 1200)<sup>4\*</sup>

<sup>4\*</sup> Digital only

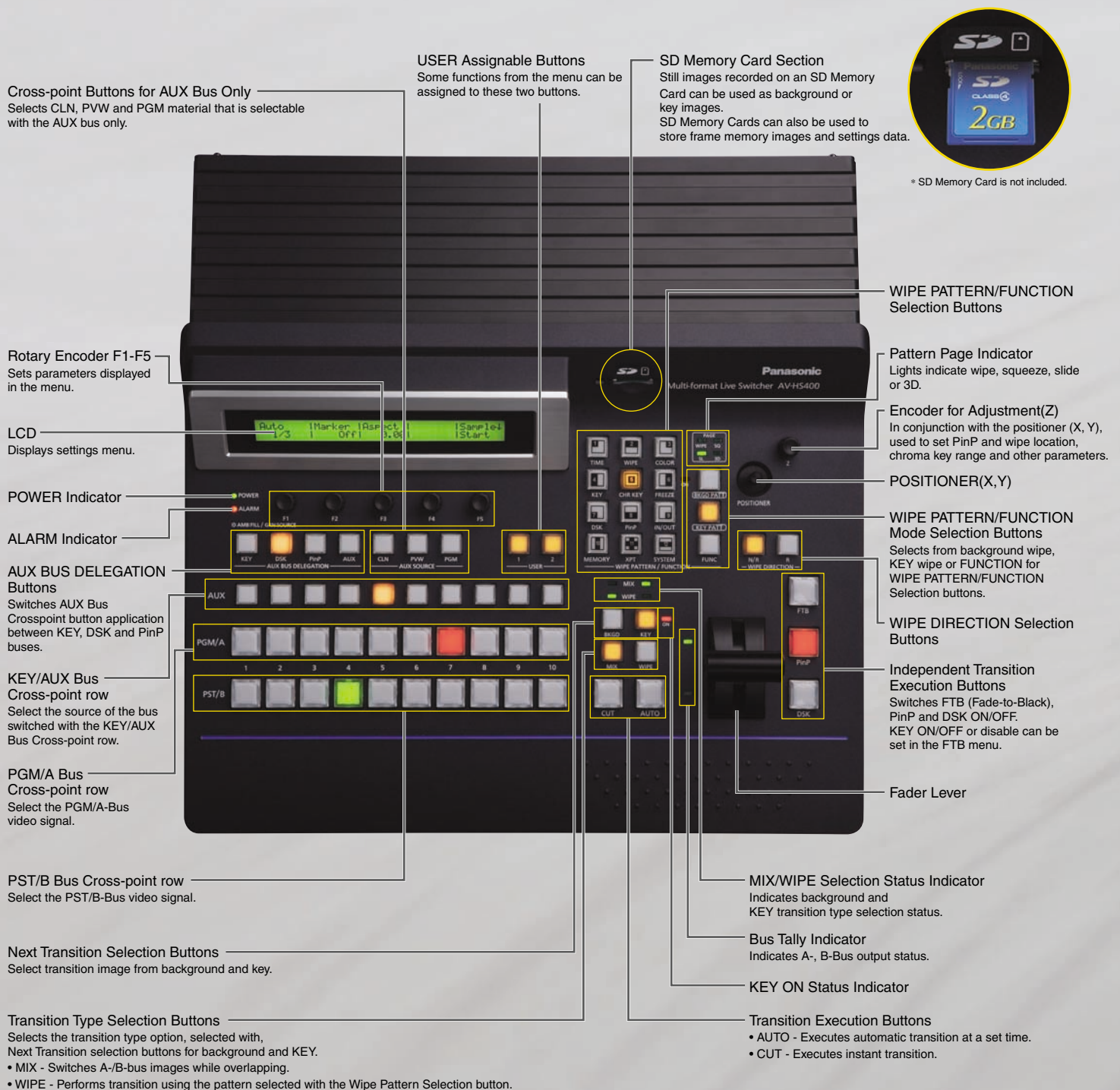


Optional boards enable expansion of inputs/outputs (up to two of each).

The photograph above is an image with the AV-HS04M3 (top right)/AV-HS04M2 (bottom right)/ AV-HS04M5 (top left)/ AV-HS04M4 (bottom left) added.

# Multi-system compatibility for extra flexibility “Compact” -- with all the functions you need

■ The main unit and control panel are integrated in a compact body.





# in the field and studio. for superb results.

## ■ Multi-view display Preview on a Single Monitor

Multi-view display lets you compile and view sources from PGM, PVW, to input materials on a single screen, so you can reduce the number of monitors required.

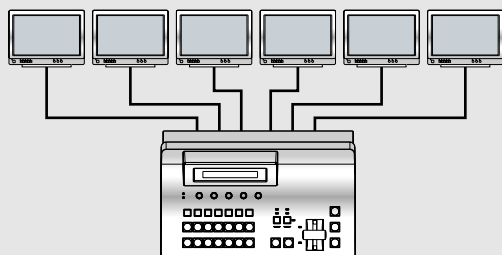
### Example of an AV-HS400 monitor system

#### Simultaneous split-screen preview with a single monitor.



### Example of conventional monitor system

Connection of separate monitors is required for each input, PVW and PGM.



\* The image shows loop-through outputs connected to switcher inputs.



## ■ Number and Location of Images is Selectable

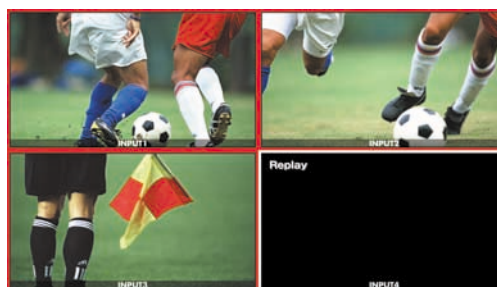
- The number of split-screen can be selected from 10, 8, and 4.
- Display of signal name in each screen (ON/OFF possible).
- Display of red tally indications in frames for PGM output.
- Left/right switching of PGM and PVW screens possible.
- Arrangement of the images can be changed.



Ten Split Pictures (images)



Eight Split Pictures (images)



Four Split Pictures (images)

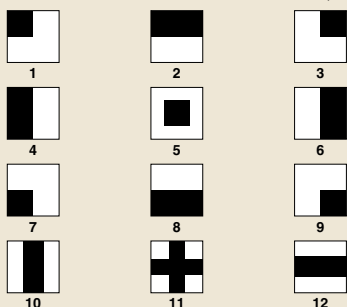
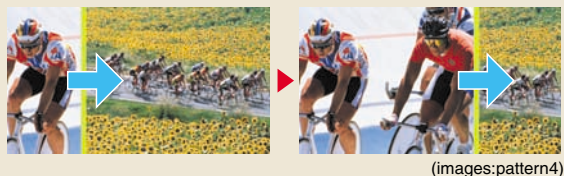
### Multiple Effects for Stunning Results

In addition to standard wipe patterns, the DVE allows you to enjoy squeeze and slide effects, and different types of 3D. Luminance key, chroma key and DSK are also provided as standard. Plus PinP (Picture-in-Picture), with extremely simple operation.

#### A total of 43 effects offer great creative flexibility

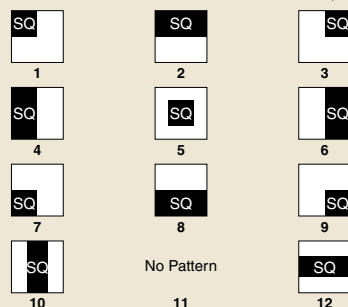
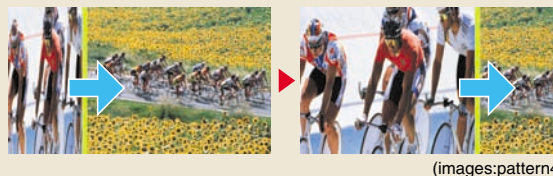
##### WIPE

Switching between 12 wipe patterns.



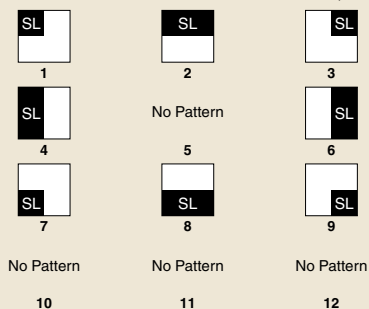
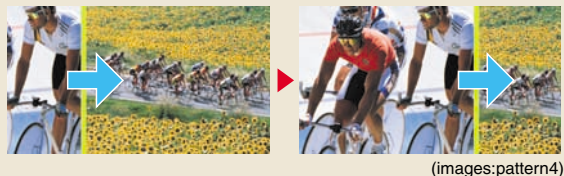
##### SQ (Squeeze)

Switching between 11 types of squeeze including center, top and bottom.



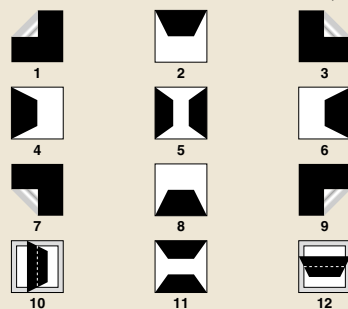
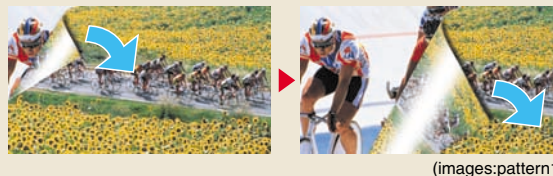
##### SL (Slide)

Switching between up, down, left, right and diagonal slide effects.



##### 3D (3 Dimension)

Switching between 3D effects such as page turn and rotate.



#### Chroma key for broadcast quality composite images

High-quality chroma key for broadcast and commercial production applications.

Chroma key material

Background material

After composition



#### Example of composite effect

WIPE DSK



PinP (images)

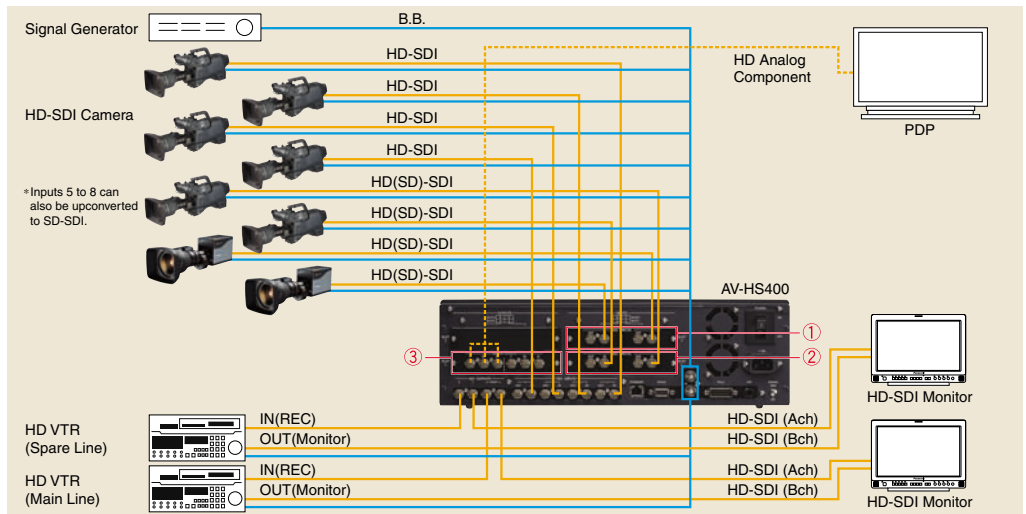
## SYSTEM EXAMPLE

### ● Ready for broadcast and studio production applications.

#### HD-SDI camera environment (with Genlock)

□ = Option Boards

- ① SDI INPUTS(AV-HS04M1)
- ② SDI INPUTS(AV-HS04M1)
- ③ ANALOG OUTPUTS(AV-HS04M4)

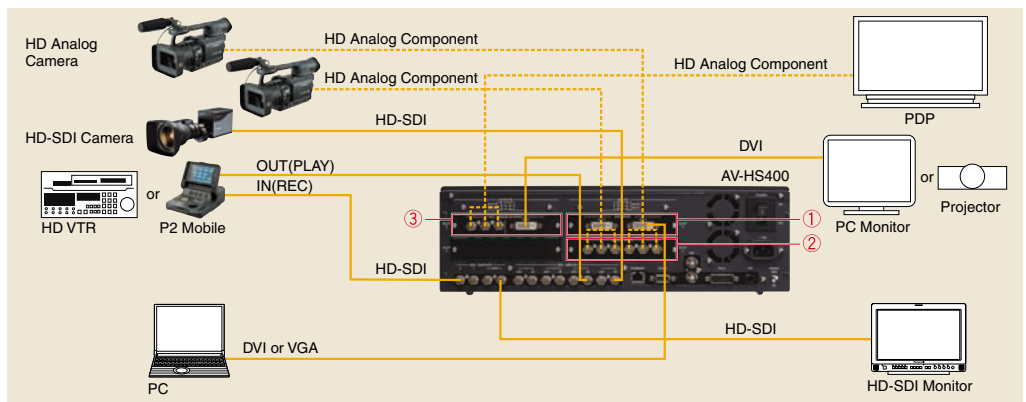


### ● Ideal for use with simple systems at CATV stations, schools and other locations.

#### HD camera environment (no Genlock): Using the HD Analog component option

□ = Option Boards

- ① DVI INPUTS(AV-HS04M3)
- ② ANALOG INPUTS(AV-HS04M2)
- ③ DVI/ANALOG OUTPUTS(AV-HS04M5)

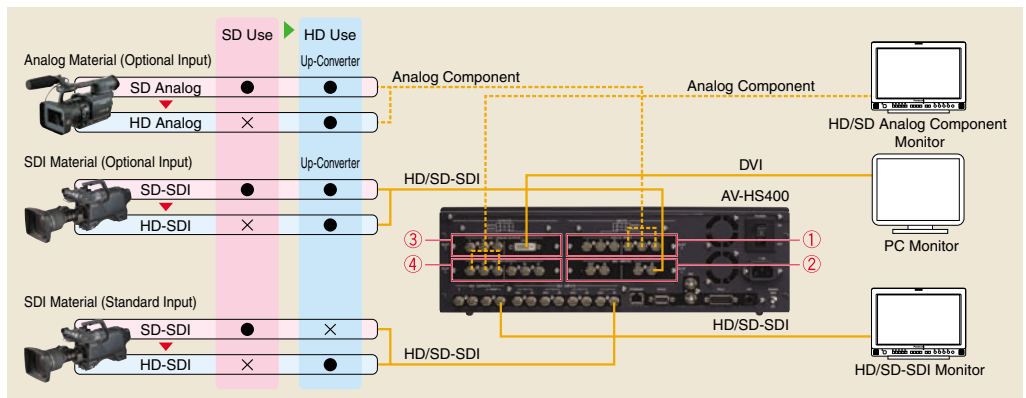


### ● Provides the flexibility required for facilities moving from SD to HD production.

#### A combined HD/SD environment without Genlock.

□ = Option Boards

- ① ANALOG INPUTS(AV-HS04M2)
- ② SDI INPUTS(AV-HS04M1)
- ③ DVI/ANALOG OUTPUTS(AV-HS04M5)
- ④ ANALOG OUTPUTS(AV-HS04M4)



### ■ Option Boards You can expand inputs/outputs to match your system.

#### INPUTS



**SDI INPUTS  
AV-HS04M1**  
INPUTS: HD/SD-SDI x 2(BNC)(Built-in Up-converter)



**DVI INPUTS  
AV-HS04M3**  
INPUTS: DVI-I x 2(Built-in Scaler)



**ANALOG INPUTS  
AV-HS04M2**  
INPUTS: HD/SD ANALOG Component x 2(Y/Pb/Pr)  
(Built-in Up-converter)

#### OUTPUTS



**ANALOG OUTPUTS  
AV-HS04M4**  
OUTPUTS: Analog Component x 2(Y/Pb/Pr)



**DVI/ANALOG OUTPUTS  
AV-HS04M5**  
OUTPUTS: DVI-I x 1, Analog x 1

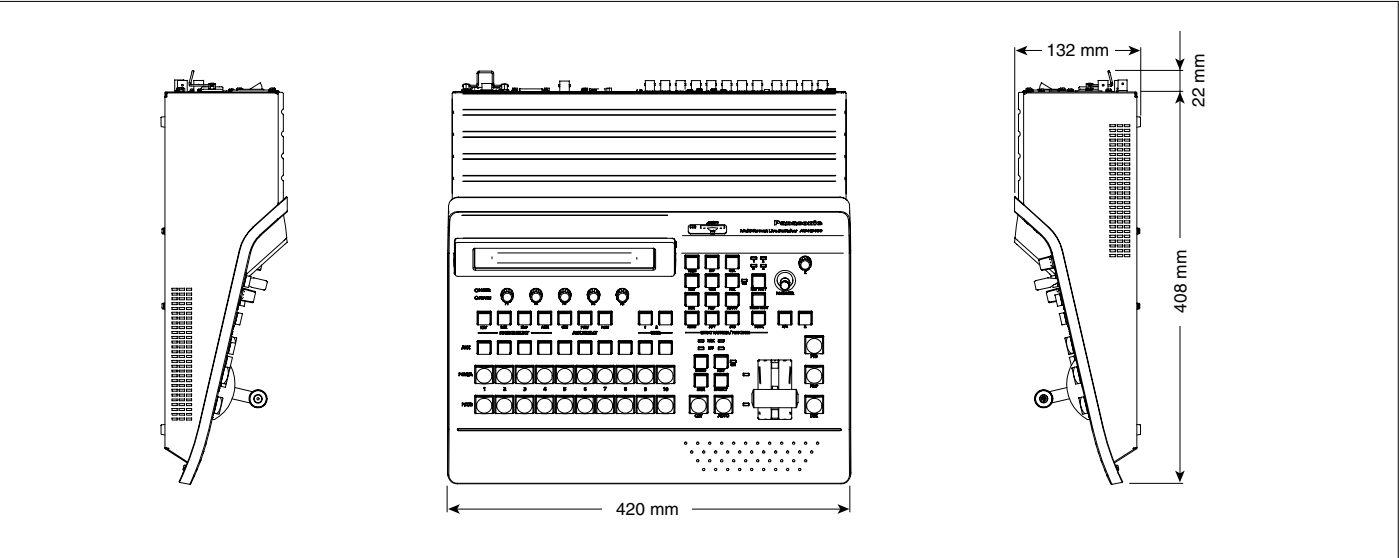


● Specifications

Video processing	Video format	SD (480/59.94i, 576/50i), HD (1080/59.94i, 1080/50i, 720/59.94p, 720/50p)	WIPE/DVE	Pattern	WIPE x 12, Squeeze x 11, SLIDE x 8, 3D DVE x 12 (3 directions) Excluding 3D, selection with key transition is possible independently of background.
M/E		1M/E	Transition	Transition method	FADER, AUTO
Input	Video processing	Y:Cb:Cr, 4:2:2 10 bit RGB, 4:4:4 8 bit	KEYER	Transition type	Cut, mix, wipe (including DVE), background and key can be selected.
	Video	4 inputs (HD/SD-SDI)  Option: A maximum of four inputs (up to 2 boards each of 2 of 3 types of input boards can be added: HD/SD-SDI x 2, HD/SD-analog x 2, DVI/RGB x 2).		Key source	BUS
				Key fill	BUS, MATTE
			Key mode	Linear key, Lum key, Chroma key (Key only)	
	Key	Assign one out of video inputs	PinP	Transition method	AUTO (PinP only)
	DSK	Assign one out of video inputs		Transition type	MIX
Output	Reference	Black burst/TRI (loop through) x 1	Interface	Serial (EDITOR)	D-sub9pin x 1: RS-422 (GVG protocol compatible)
	Video	Standard: Four outputs (PGM x 2, general-purpose x 2, each HD/SD-SDI )  Option: A maximum of four outputs (up to 2 boards each of 2 types of output boards can be added: general-purpose x 4, each HD/SD-analog x 2, DVI/analog x 1 each).  The six general-purpose output interfaces (OUT1 to 6) above are assignable as PGM, PVW, AUX, multi-screen and keyout.		Tally output	D-sub15pin x 1, open collector output
				GPI	ø 3.5 Stereo mini jack
			LAN	10 Mbps x 1 (Service purpose)	
			Removable media	SD memory card slot	1 (for transferring still image files and providing an upgrade capability)
			Humidity	10 % to 90 % (no condensation)	
	Operating temperature	0 °C to +40 °C			
	Power Supply	AC 220 V to 240 V, 50 Hz/60 Hz			
	Power consumption	Approx. 98 W			
	Dimensions (W x H x D)	420 mm x 132 mm x 408 mm (excluding protrusions)			
	Reference	Loop through x 1 (Genlock), or Black burst x 2 (internal synchronization)	Weight	Approx. 6.4 kg: without options Approx. 7.2 kg: with options	

\* Features and specifications in this document are subject to change without notice due to continual improvements.

● Dimensions



● SD Logo is a trademark.

Panasonic

Matsushita Electric Industrial Co., Ltd.  
Panasonic System Solutions Company  
Corporate Broadcast and Multimedia Business Unit  
4-3-1 Tsunashima-Higashi,  
Kohoku-ku, Yokohama City 223-8639, Japan  
<http://panasonic.biz/broad/>

[Countries and Regions]					
Argentina	+54 1 308 1610	Kuwait	+965 481 2123	Sweden	+46 (8) 680 26 41
Australia	+61 2 9986 7400	Lebanon	+961 1 216827	Switzerland	+41 (0)41 259 96 32
Austria	+43 (0)1 610 80 773	Malaysia	+60 3 5549 5422	Taiwan	+886 2 2725 9100
Bahrain	+973 252292	Mexico	+52 5 488 1000	Thailand	+66 2 731 8888
Belgium	+32 (0)2 481 04 57	Montenegro, Serbia		Turkey	+90 216 578 3700
Bulgaria	+359 2 946 0786		+41 (0)26 466 25 20	U.A.E.	+971 4 282201
Brazil	+55 11 3889 4035	Netherlands	+31 73 64 02 577	Ukraine	+380 44 4903437
Canada	+1 905 624 5010	New Zealand	+64 9 272 0100		+380 44 4903438
China	+86 10 6515 8828	Norway	+47 67 91 78 00		[ext. 112]
(Hong Kong	+852 2313 0888)	Pakistan	+92 5370320 21	U.K.	+44 (0) 1344 70 69 20
Czech Republic	+420 236 032 552/511	Panama	+507 229 2955	U.S.A.	+1 201 348 5300
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Egypt	+20 2 3938151	Philippines	+63 2 633 6162	Vietnam	+84 88370280
Finland, Latvia, Lithuania, Estonia		Poland	+48 (22)338 1100		
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